Thermador

Professional Ranges Models: PDR30/36/48…PRG30/36/48

The control continuously monitors system parameters for control and oven failures and reports a fault code when a system problem is detected. The control utilizes the ovens blue "on light" and oven "heating light" to report a detected fault code. The control will continue to flash the lights in the appropriate sequence as long as the fault exists.

Detection of a fault does not hinder the ability of the control to continue to function if the fault is not critical for the intended operation. For example: If the range door latch is inoperative, the range will continue to cook since the fault would only prevent the range from self-cleaning.

ERROR CODE	LIGHT SEQUENCE CODE	DESCRIPTION
E1	22	EEPROM ERROR
E2	01	CONTROL NOT CALIBRATED
E3	10	SENSOR OPEN
E4	12	SENSOR SHORTED
E5	21	POTENTIONMETER FAILURE
E6	32	OVER TEMPERATURE-COOKING
E7	23	OVER TEMPERATURE-CLEANING
E9	43	NO COOLING FANS
E11	44	DOOR LATCH FAULT
E12	11	EXP. BOARD NOT CONNECTED
E13	13	VCC LIFT OFF ERROR
E14	55	SELECTOR SWITCH ERROR

Thermador

HOW TO INTERPRET CODES

When a fault occurs, the control will flash the blue oven "on light" and the Blue "heating light" sequentially to indicate the fault. The fault codes have two numbers, these numbers are interpreted by the number of times the lights flash. The oven "on light" will flash indicating the first number, and the "heating light" will flash indicating the second number.

EXAMPLE:

Error E9 is…. <u>No Cooling Fans.</u> The code is 43. The oven "on light" will flash four times, then the "heating light" will flash three times, then pause. The sequence will then repeat as long as the fault is present.

ERROR CODES FOR OVENS WITH DREEFS CONTROL

The following chart shows the error codes that can be displayed in the Oven/Selector window during specific oven malfunctions. Some of the error messages can be cleared by performing the following steps:

1. Turn the selector knob to *OFF*
2. "Tweak" the oven by turning the selector knob slightly to the left (counterclockwise). This may stop the flashing message/beeping and clear the window.
3. For errors *E1, E9, E11, E12* and *E13*, the power supply going to the even must be turned off momentarily, and back on again
4. If an error remains displayed when the selector switch is *OFF,* and after attempting to clear the display, as shown in steps 2 and 3, turn off the power going to the oven, and refer to the chart below to help you find the problem.

ERROR MESSAGE	ERROR CODE NOTES	DESCRIPTION OF PROBLEM
E1	C & E	Control board problem.
E2	G & K	Cook or Clean mode runaway (temp >635 °F). Clean mode runaway (clean temp +32 °F).
E3	A & H	Open oven temperature sensor (>5000 Ω).
E4	A & H	Shorted oven temperature sensor (<5000 Ω).
E5	K& D	Control board too cold, too hot, or defective.
E6	C & J	Control board problem.
E7	A & I	Illegal temperature display. Turn off oven and try again.
E8	A & D	Control board problem.
E9	A & E	Latch switch problem.
E10	B & D	Control board problem.
E11	A & F	CT oven – latch switch problem
E12	A & E	CT ovens – latch switch problem
E13	A & C	CT ovens – latch frozen or no power to latch motor. CMT ovens – control board not converted (refer to page 3-7 for conversion data).
E14	A & E	Latch switch problem.
E15	B & D	Control board problem.

ERROR CODE NOTES:

A Turns heat *off* on the failed oven only; microwave not affected.
B Turns all heat *off*; microwave not affected.
C Disables the CLEAN mode in both ovens; allows COOK and microwave.
D Error will remain in the display until oven is repaired and powered back up. No error tones.
E Turning the oven *off* stops the error and flashing display. Can tweak away the error code. Error is redisplayed only if the selector is turned to CLEAN.
F Tweaking clears to "---" for retry.
G Clears when the oven temperature is less then the runaway temperature with the selector switch *off*.
H Can be cancelled by tweaking if a good sensor is detected.
I Cleared with a mode change.
J Can be tweaked away for immediate retry. User must unlatch and delete the "---" to try to relatch the door.
K Turns heat and microwave *off.*
L If two switches show a locked door, then E13 and LOCK are permanent in the display (in all modes). If the two switches show an open door, tweak away the E13 error message.

13. DIAGNOSTIC CODES

DeBounce is the Rate at which the error checking occurs

13.1 Diagnostic Code Checking

The following chart describes the Fault code structure for the Control. Alarm fault monitor is always active. Any oven cancel key will reset the display to TOD idle.

CODE	DESCRIPTION	WHEN CHECKED	DEBOUNCE	ERROR MESSAGE DISPLAYED	ACTION TAKEN BY CONTROL
F13	Upper oven RTD not calibrated	Always	10 seconds	Message 1	Cancel cooking/timing functions
F14	Display board EEPROM error	Oven Programming	5 tries	Message 1	Cancel cooking/timing functions
F19	Power board Communication error	Always	20 seconds	Message 1	Cancel cooking/timing functions
F23	Keyboard gain unstable Keyboard scratches Loose molex or pins, air pocket in control	Always	20 seconds	Message 1	Cancel cooking/timing functions
F24	Keyboard disconnected	Always	20 seconds	Message 1	Cancel cooking/timing functions
F25	Keys stuck	Always	20 seconds	Message 1	Cancel cooking/timing functions
F26	Keys moving/dropping out	Always	20 seconds	Message 1	Cancel cooking/timing functions
F30	Upper oven sensor shorted	Always	20 seconds	Message 1	Cancel cooking/timing functions
F31	Upper oven sensor open	Always	20 seconds	Message 1	Cancel cooking/timing functions
F32	Upper oven over temperature while cleaning	Cleaning	20 seconds	Message 1	Cancel cooking/timing functions
F33	Upper oven over temperature while	Non-Clean	20 seconds	Message 1	Cancel

	cooking				cooking/timing functions
F34	Upper oven cooling fan over-speed or under-speed detected	Cooking	1 minute	Message 1	Cancel cooking/timing functions
F40	Upper oven meat probe shorted	Cooking	20 seconds	Message 1	Cancel cooking/timing functions
F41	Upper oven meat probe not calibrated	Always	10 seconds	Message 1	Cancel cooking/timing functions
F43	Lower oven RTD not calibrated	Always	10 seconds	Message 1	Cancel cooking/timing functions
F50	Upper oven door latch signal shorted low	Always	1 minute	Message 1	Cancel cooking/timing functions
F51	Upper oven door latch stuck unlocked	Cooking/ Cleaning	1 minute	Message 1	Cancel cooking/timing functions
F52	Upper oven door position error	Cooking/ Cleaning	1 minute	Message 1	Cancel cooking/timing functions
F53	Upper oven door latch stuck locked	Non-Clean	1 minute	Message 1	Cancel cooking/timing functions
F54	Upper oven latch input shorted	Cleaning	1 minute	Message 1	Cancel cooking/timing functions
F60	Lower oven sensor shorted	Always	20 seconds	Message 1	Cancel cooking/timing functions
F61	Lower oven sensor open	Always	20 seconds	Message 1	Cancel cooking/timing functions
F62	Lower oven over temperature while cleaning	Cleaning	20 seconds	Message 1	Cancel cooking/timing functions
F63	Lover oven over temperature while cooking	Non-Clean	20 seconds	Message 1	Cancel cooking/timing functions
F64	Lower oven cooling fan over-speed or under-speed detected	Cooking	1 minute	Message 1	Cancel cooking/timing functions
F70	Lover oven meat probe shorted	Cooking	20 seconds	Message 1	Cancel cooking/timing functions

F71	Lower oven meat probe not calibrated	Always	10 seconds	Message 1	Cancel cooking/timing functions
F80	Lower oven door latch signal shorted low	Always	1 minute	Message 1	Cancel cooking/timing functions
F81	Lower oven door latch stuck unlocked	Cooking/ Cleaning	1 minute	Message 1	Cancel cooking/timing functions
F82	Lower oven door position error	Cooking/ Cleaning	1 minute	Message 1	Cancel cooking/timing functions
F83	Lower oven door latch stuck locked	Non-Clean	1 minute	Message 1	Cancel cooking/timing functions
F84	Lower oven door latch input shorted	Cleaning	1 minute	Message 1	Cancel cooking/timing functions

Range Error Codes

CODE	DESCRIPTION	WHEN CHECKED	FAULT LIMIT
F31	**Oven temperature sensor failure**	Cook or clean programmed	20 sec
F33	Warning Drawer Sensor Failure	When W. Drawer is active	20 sec
F41	Motorized latch will not lock	Latch should be locked	1 min
F43	Motorized latch will not unlock	Latch should be unlocked	1 min
F45	Motorized Latch both locked and unlocked	Always	1 min
F111	Runaway Oven temperature 585°F	Latch unlocked	5 sec
F113	Runaway Oven temperature 950°F	Latch locked	5sec
F121	Stuck key in the membrane switch layer	Always	1 min
F125	Cancel key circuit problem	Always	1 min
F141	Slave micro not functioning	Always	1 min
F151	Eeprom failure or communication circuit failure	Cook or clean programmed	1 sec
F153	User Interface too hot	Always	1 sec
F154	Power Board too hot	**Always**	1 sec
F155	Cook profile corrupted in EEPROM	Cook or clean Programmed	1 sec
F170	Power Failure	Always	2 ms
F190	Power over voltage	At power on	
F200	Time out and stop function	During Production test mode	110 sec.
F210	Range exceeded safe test limits	During Service test mode	200°F

Range Error Codes – Additional Information

CODE	DESCRIPTION	WHEN CHECKED
F1	Meat probe not there or incorrect	During Test / use
F2	Oven sensor not correct	During Test / use
F3	Warming sensor not correct	During Test / use
DOOR LATCH ERROR	Door latch problem	During self-clean
ERROR	Temp. reaches 585 degrees F. Display shows “CONTACT SERVICE” and beeps. The beep can be stopped with touching cancel zone, but display will stay up with program locked until main power is removed for a minimum of 5 seconds. If the temperature continues to rise (due to stuck relay) the latch will lock at 600 degrees F	During any cooking mode

Note: Depending on model, program will only look for probes or sensors that it should have.

WFMC Service Tips – Test Program (2B): Module Fault Codes (Test1)

Last 8 fault codes are stored & display!

HINT: # of faults reads "**0**" for faults which didn't occur. Look at # of faults, not error #, to see if faults occurred – scroll thru all faults to check if any occurred.

Test **P1:ERRORS / P:01** (Viewing control module fault codes) – Start & end test **P1** (WFMC6400) / **(P:01)** (WFMC3200) by pushing **Start/Pause** button. Scroll through list of fault codes by pushing **Spin Selection** (WFMC3200) or **Menu** (WFMC6400) buttons.

- WFMC3200 display alternates between fault code (e.g. **E:01**) & when fault occurred on in last 8 washes (e.g. **: C:00**) – shows **C:00** if fault didn't occur.
- WFMC6400 display shows fault code & when fault occurred on in last 8 washes (e.g. **0 – Er:01**)

WFMC32 Display	WFMC64 Display	Test #	Problem	Possible Cause(s)
E:01	Er:01	washing	Door open	Door lock not engaged
E:02	Er:02	washing	Door lock doesn't unlock	Jammed lock or bad wire harness
E:03	Er:03	washing	Door lock doesn't lock	Jammed lock or bad wire harness
E:04	Er:04	washing	Door control broken	Faulty Triac or control module
E:05	Er:05	P:16	NTC open-circuited	Faulty NTC or bad wire harness
E:06	Er:06	P:16	NTC shorted	Faulty NTC or bad wire harness
E:07	Er:07	P:16	Unpexpected heating (heater on at wrong time)	Faulty heater or stuck heater relay
E:08	Er:08	P:16	Heater doesn't shut off	Faulty heater or stuck heater relay
E:09	Er:09	P:4	Communication lost to motor	Faulty wire harness
----	Er:10	P:11	Flow meter gives wrong values	Faulty flow meter or wire harness
----	Er:11	P:8/9/13	No water flow (within 6 minutes)	Faulty inlet valve, wire harness, hose
E:12	Er:12	P:8/9/13	Water supply time exceeded	Faulty inlet valve, wire harness, hose
E:13	Er:13	P:15	Drian pump time exceeded	Faulty drain pump, wire harness, hose
E:14	Er:14	P:9	Overflow level exceeded	Faulty/blocked pump, hose, inlet valve
----	Er:15	P:8	Pressure sensor gives failure voltage level	Faulty pressure sensor, wire harness
----	Er:16	P:8	Can't calibrate pressure sensor	Faulty pressure sensor, wire harness
E:20	Er:20	P:4	Spinning aborted due to unbalanced load	Unbalanced load or faulty wire harness
E:21	Er:21		Excessive foam	Wrong or too much detergent used
E:22	Er:22	washing	Frequency synchronization failed	Faulty control module
E:24	Er:24	P:4	Motor power relay failed	Faulty control module

WFMC Service Tips – Test Program (2C): Motor Control Fault Codes (Test1)

Last 16 fault codes are stored & display!

HINT: # of faults reads "**0**" for faults which didn't occur. Look at # of faults, not error #, to see if faults occurred – scroll thru all faults to check if any occurred.

Test **P1:ERRORS / P:01** (Viewing motor control fault codes) – Start & end test **P1** by pushing **Start/Pause** button. Scroll through list of (18) fault codes by pushing **Spin Selection** (WFMC3200) or **Menu** (WFMC6400) buttons.

- WFMC3200 display alternates between fault code (e.g. **d:01**) & when fault occurred on in last 16 washes (e.g. **: C:00**) – shows **C:00** if fault didn't occur.
- WFMC6400 display shows fault code & when fault occurred on in last 16 washes (e.g. **0 – Er:01**)

WFMC32 Display	WFMC64 Display	Test #	Problem	Possible Cause(s)
d:01	**dr:01**	**P:04**	Motor control short circuit	Faulty motor control.
d:02	**dr:02**	**P:04**	Motor control interruption	Faulty motor control.
d:03	**dr:03**	**P:04**	Damaged motor control temperature sensor	Faulty temperature sensor.
d:06	**dr:06**	**P:04**	NTC relay failure	NTC too hot or relay stuck closed.
d:07	**dr:07**	**P:04**	Motor winding short circuited	Motor winding short circuited.
d:08	**dr:08**	**P:04**	Motor speed sensor failed	Faulty speed sensor or wire harness.
d:09	**dr:09**	**P:04**	Voltage too high	Faulty motor control.
d:10	**dr:10**	**P:04**	Power limiter switch off	Motor overloaded or binding.
d:11	**dr:11**	**P:04**	Voltage too low	Faulty motor control.
d:12	**dr:12**	**P:04**	Motor control high current switch off	Motor overloaded or binding.
d:13	**dr:13**	**P:04**	Motor control high temperature switch off	Motor overloaded or binding.
d:14	**dr:14**	**P:04**	Motor control high temperature warning	Motor overloaded or binding.
d:15	**dr:15**	**P:04**	Power limiter warning	Motor overloaded or binding.
d:16	**dr:16**	**P:04**	Motor high temperature switch off	Motor overloaded or binding.
d:17	**dr:17**	**P:04**	Motor high temperature warning	Motor overloaded or binding.
d:18	**dr:18**	**P:04**	Peak voltage too high	Faulty motor control.

WTMC Service Tips - - Test program (4A): Fault Codes

WTMC Dryer Test Program Fault Codes				
Fault Code	**Fault**	**Solution**	**Notes**	**Effect**
E:11	Overheating due to clogged lint filter.	Clean lint filter (&air duct if necessary).	Displays **E:01** during normal use. Measures reduced air flow.	
E:12	Severe overheating due to clogged lint filter.	Clean lint filter (&air duct if necessary).	Displays **E:01** during normal use. Measures reduced air flow.	
E:13	Maxium drying time exceed	Check heater, control module, NTC's & Hi-limits. Usually faulty heater. Can also be overloaded dryer.	Stops & displays **E:03** during normal use (after maxium drying time limit of 240 minutes).	.
E:17	NTC error (NTC R3 @ lint screen)	Check NTC R3 & wire harness. Replace faulty part.	Typically shorted or opened wire harness.	Dryer stops & can't be restarted.
E:18	NTC error (NTC R2 @ heater)	Check NTC R2 & wire harness. Replace faulty part.	Typically shorted or opened wire harness.	Dryer stops & can't be restarted.
E:20	EEPROM error	Replace faulty control module.		Dryer stops & can't be restarted.
E:21	Incorrect checksum	Replace faulty control module.		Dryer stops & can't be restarted.
E:22	Invalid update	Replace faulty control module.		Dryer stops & can't be restarted.

NOTE: To run fault codes tests to display fault codes:

- While pushing & holding ***Start/Stop & Delicates*** button, rotate **cycle selector knob** to **Extra Dry – Regular/Cotton.**
- Push ***Start/Stop*** button to start test. Push ***Start/*Stop** button to scroll through fault codes (if more than one exists). Do not rotate knob through ***Off*** to avoid exiting test program.
- Rotate ***cycle selector knob*** to end test.

WTMC Service Tips - - Test program (4B): Fault Codes

WTMC Dryer Test Program Fault Codes				
Fault Code	**Fault**	**Solution**	**Notes**	**Effect**
E:23	Model variant doesn't match table	Replace faulty control module.		Dryer stops & can't be restarted.
E:24	Software version doesn't match table	Replace faulty control module.		Dryer stops & can't be restarted.
E:25	Damaged data table	Replace faulty control module.		Dryer stops & can't be restarted.
E:26	Control error	Replace faulty control module.		Dryer stops & can't be restarted.

NOTE: Fault displayed alternates with # of times fault occurred every two (2) seconds. If there's no faults, displays will be blank.

- E:xx = fault code from E11 – E39 (e.g. E:11)
- C:xx = # of occurrences (e.g. C:01)

NOTE: When test program is initially entered, last fault code will show. Display will be cleared once any test is started.

Service Tips – Fault Codes (1)

DISHWASHER TEST PROGRAM ERROR CODES (on 2&3-digit digital displays):

- 0- No faults
- 1- Aqua Sensor (Sensotronic) fault
- 2- Heating system fault (heater, Hi-Limit, flow switch, NTC, control heater relay)
- 4- Water filling fault
- 8- NTC (temperature sensor) fault
- 16- Water switch fault

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TIP: **Fault codes add up for multiple faults (e.g. heating + water filling fault = 2 + 4 = 6**

DISHWASHER TEST PROGRAM ERROR CODES (on 2&3-digit digital displays):

- F- Water filling fault (underfill, overfill or water in the base)
- 2H- Last wash cycle too long (> 99 minutes). Can be cold inlet water or heating system fault (heater, Hi-Limit, flow switch, NTC, control module heater relay).
- F- Delay Start feature (not a fault code)

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HINT: Apexx heater runs during steps 05 - 08. Press "-" button to skip to test 05 to measure heater amp draw.

DISHWASHER TEST PROGRAM ERROR CODES (on lower line of full text Apexx SH 99 displays):

- S3 - No faults
- A – Aqua Sensor (red) fault
- B – Aqua Sensor (green) fault
- E – Water switch fault (no pulses detected)
- F – Water filling fault
- G – Water switch fault (won't stop running)
- H – Heating system fault (heater, Hi-Limit, flow switch, NTC, control module heater relay)
- K- NTC fault (short-circuited or open-circuited)
- Xx – Test program step count (testing done when = 00)

TIP: Top line shows wash cycle & bottom line shows fault code.

◄ S- - 3- - - - - - - - - - - - - - - - - ►
Start ►

In Cycle 0 - - - - - - - - - - - - - ►
S3

◄ STEP
S3 00

S3 00

HINT: **Dishwasher test program heat water to 150°F, so test programs will generally run > 20 minutes for incoming water temperatures ~ 120°F**

HINT: **Open door to select test program for fully-integrated models, then close door to run program.**

NOTE: **Flow through heaters heat water ~ 2°F/minute.**

Service Tips – Fault Codes (2)

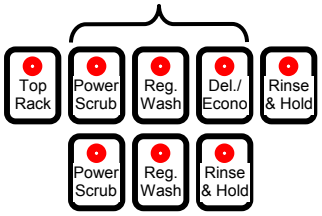
DISHWASHER TEST PROGRAM ERROR CODES (on SHX33A/43E/46A-B, SHV46C, SL84A models):

- 🛠 ●○○ – **Heating system fault (heater, Hi-Limit, flow switch, control heater relay)**
- 🛠 ○●○ – **NTC (temperature sensor) fault**
- 🛠 ○●● – **Water filling fault**
- 🛠 ●○○ – **N/A**
- 🛠 ●○● – **N/A**
- 🛠 ●●○ – **Aqua sensor (sensotronic) fault**
- 🛠 ●●● – **N/A**

SHV46C, SHX43E/46A-B, SL84A

SHX33

Fault code LED's



TIP: **Fault codes do NOT add up for multiple faults – shows highest fault code on list above (1st – heating, 2nd – NTC, 3rd – water filling, 4th – aqua sensor)**

DISHWASHER TEST PROGRAM ERROR CODES (on SHU43E/53E/66E models):

Faults	LED Fault Codes			
	READY	CYCLE	CLEAN	NSF
0 - No faults	✳	○	✳	○
1 - Heater Element	●	○	✳	○
2 - Water Filling	✳	●	✳	○
3 - NTC	✳	○	●	○
4 - Aquasensor	✳	○	✳	●

✳ LED flashes
● LED lit
○ LED off

NOTE: **Flow through heaters heat water ~ 2°F/minute.**

HINT: **Open door to select test program for fully-integrated models, then close door to run program.**

HINT: **Dishwasher test program heat water to 150°F, so test programs will generally run > 20 minutes for incoming water temperatures ~120°F.**

BOSCH
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ERROR CODES

For products with electronic controls

Thermador

Professional Ranges Models: PDR30/36/48…PRG30/36/48

The control continuously monitors system parameters for control and oven failures and reports a fault code when a system problem is detected. The control utilizes the ovens blue "on light" and oven "heating light" to report a detected fault code. The control will continue to flash the lights in the appropriate sequence as long as the fault exists.

Detection of a fault does not hinder the ability of the control to continue to function if the fault is not critical for the intended operation. For example: If the range door latch is inoperative, the range will continue to cook since the fault would only prevent the range from self-cleaning.

ERROR CODE	LIGHT SEQUENCE CODE	DESCRIPTION
E1	22	EEPROM ERROR
E2	01	CONTROL NOT CALIBRATED
E3	10	SENSOR OPEN
E4	12	SENSOR SHORTED
E5	21	POTENTIONMETER FAILURE
E6	32	OVER TEMPERATURE-COOKING
E7	23	OVER TEMPERATURE-CLEANING
E9	43	NO COOLING FANS
E11	44	DOOR LATCH FAULT
E12	11	EXP. BOARD NOT CONNECTED
E13	13	VCC LIFT OFF ERROR
E14	55	SELECTOR SWITCH ERROR

C, CM and CJ Oven Error Code Messages – Updated 2/21/02

Error Code Displayed	Probable Cause	Example	Corrective Action
"F10"	Power Board Incompatibility.	Power/Relay Board.	Check all connections between the power/relay board and the Control display PCB. If OK, replace power/relay board.
"F11"	Communication Error With Power Board.	Power/Relay Board.	Check all connections between the power/relay board and the control display PCB, especially **P11.** If OK, replace power/relay board.
"F12"	Vcc Lift-off(Power/Relay Board).	Power/Relay Board.	Replace power/relay board.
"F13"	Power Board Not Calibrated.	Power/Relay Board.	Check if air switch jammed. If OK, replace power/relay board.
"F14"	Control Display PCB EEPROM Error.	Power/Relay Board.	Replace power/relay board.

C, CM and CJ Oven Error Code Messages…continued

Error Code Displayed	Probable Cause	Example	Corrective Action
"F19"	Miscellaneous Power/Relay Board Error.	Power/Relay Board.	Check all connections between the power/relay board and the Control display PCB. If OK, replace power/relay board.
"F20"	Upper Oven Cancel Key Shorted High.	Control Display PCB Or Touch Panel.	Check all connections between the control display PCB and the touch panel. Replace control display PCB or touch panel or both.
"F21"	Lower Oven Cancel Key Shorted High.	Control Display PCB Panel.	Check all connections between the control display PCB and touch panel. Replace control display PCB or touch panel or both.
"F22"	Upper Oven Cancel Key Shorted Low.	Control Display PCB Or Touch Panel.	Check all connections between the control display PCB and the touch panel. Replace control display PCB or touch panel or both.
"F23"	Lower Oven Cancel Key Shorted Low.	Control Display PCB Or Touch Panel.	Check all connections between the control display PCB and the touch panel. Replace control display PCB or touch panel or both.
"F24"	Touch Input Key Stuck.	Control Display PCB Or Touch Panel.	Check all connections between the control display PCB and the touch panel. Make sure that there are no objects in close Proximity to the front and back sides of the touch panel pads. Replace control display PCB, if persists replace touch panel.

C, CM and CJ Oven Error Code Messages…continued

Error Code Displayed	Probable Cause	Example	Corrective Action
"F25"	Multiple Touch Input Keys Stuck.	Control Display PCB Or Touch Panel.	Check all connections between the control display PCB and the touch panel. Make sure that there are no objects in close Proximity to the front and back sides of the touch panel pads. Replace control display PCB, if persists replace touch panel.
"F30"	Upper Oven Sensor Shorted.	A Short Circuit In The Upper Oven Sensor Wiring.	Check all connections, especially P3 on the power/relay board. Check resistance of upper oven sensor (approximately 1080 ohms at room temperature). Check that neither sensor wire is pinched to the appliance chassis. If sensor is OK, replace power/relay board.
"F31"	Upper Oven Sensor Open	An Open Circuit In The Upper Oven Sensor Wiring.	Check all connections. Check resistance of upper oven sensor (approximately 1080 ohms at room temperature). Check that the Solder joints in header P3 on the power board are not broken. If Sensor is OK, replace power/relay board.
"F32"	Upper Oven Over Temperature While Cleaning.	Intermittent Temp. Sensor Or Power/Relay Board.	Check header P3 on the power/relay board. Check resistance of Upper oven sensor (approximately 1080 ohms at room temperature). If sensor is OK, replace power/relay board.
"F33"	Upper Oven Over Temperature While Cooking	1. Power To The Oven Was Turned On When Temperature Inside Oven is Over 550 F. 2. Intermittent Temperature Sensor Or Power/Relay Board.	1. Allow oven to cool below 550 F before turning power on. 2. Check header P3 on the power/relay board. Check resistance of upper oven sensor (approximately 1080 ohms at room temperature). If sensor is OK, replace power/relay board. Check header P3 on the power/relay board.

C, CM and CJ Oven Error Code Messages…continued

Error Code Displayed	Probable Cause	Example	Corrective Action
"F34"	Upper Oven Cooling Fan Air Switch Not Detected.	1. Air Switch. 2. Cooling Fan. 3. An Open Circuit In The Upper Oven Air Switch Wiring.	1. Replace air switch. 2. Replace cooling fan. 3. Check all connections. Check that the solder joints in header P6 on the control display PCB are not broken.
"F40"	Upper Meat Probe Shorted	A Short Circuit In The Meat Probe Wiring.	Check header P2 on the control display PCB. Check that neither meat probe wire is pinched to the appliance chassis. If F40 persists, replace the control display PCB.
"F50"	Upper Door Signal Shorted Low.	Defective Or Jammed Upper Oven Door Or Latch Switches.	Check header P9 on the power/relay board and P11 on both power relay board and control display PCB. Ensure Door Switch is operation properly. Check that the door switch wire is not pinched to the appliance chassis. If F50 Persists, replace power/relay board. If F50 Still persists, replace control display PCB.
"F51"	Upper Door Stuck Unlocked	Defective Or Jammed Upper Oven Door Or Latch Switches.	Check header P9 on the power/relay board. Ensure door latch switches are operating properly. Check that neither latch switch wire is pinched to the appliance chassis. If F51 persists, replace power/relay board.

C, CM and CJ Oven Error Code Messages…continued

Error Code Displayed	Probable Cause	Example	Corrective Action
"F52"	Upper Oven Door Position Error (Locked & Open).	Defective Or Jammed Upper Oven Door Or Latch Switches.	Check Header P9 and P0 on the power/relay board and P11 on both power/relay board and control display PCB. Ensure door and latch switches are operating properly. Check that no door or latch switch wire is pinched to the appliance chassis. If F52 persists, replace power/relay board.
"F53"	Upper Door Stuck Locked	Defective Or Jammed Upper Oven Door Or Latch Switches.	Check header P9 on the power/relay board. Ensure door latch switches are operating properly. Check that neither latch switch wire is pinched to the appliance chassis. If F53 persists, replace power/relay board.
"F54"	Upper Latch Input Shorted	Defective Or Jammed Upper Oven Door Or Latch Switches.	Check header P9 on the power/relay board. Ensure door latch switches are operating properly. Check that neither latch switch wire is pinched to the appliance chassis. If F54 persists, replace power/relay board.
"F60"	Lower Oven Sensor Shorted.	A Short Circuit In The Lower Oven Door Wiring.	Check all connections, especially P2 on the power/relay board. Check resistance of lower oven sensor (approximately 1080 ohms at room temperature). Check that neither sensor wire is pinched to the appliance chassis. If sensor is OK, replace power/relay board.

C, CM and CJ Oven Error Code Messages…continued

Error Code Displayed	Probable Cause	Example	Corrective Action
"F61"	Lower Oven Sensor Open. Oven Sensor Wiring.	An Open Circuit In The Lower	Check all connections. Check resistance of lower oven sensor (approximately 1080 ohms at room temperature). Check that the solder joints in header P2 on the power/relay board are not broken. If sensor is OK, replace power/relay board.
"F62"	Lower Oven Over Temperature While Cleaning.	Intermittent Temperature Sensor Or Power/Relay Board.	Check header P2 on the power/relay board. Check resistance of Lower oven sensor (approximately 1080 ohms at room temperature). If sensor is OK, replace power/relay board.
"F63"	Wrong Oven Temp while cooking.	1. Power to the oven was turned on when temperature inside oven is over 550F. 2. Intermittent Temperature Sensor or Power/Relay Board.	1. Allow oven to cool below 550 F before turning power on. 2. Check header P2 on the power/relay board. Check resistance of lower oven sensor (approximately 1080 ohms at room temperature). If sensor is OK, replace power/relay board.
"F64"	Lower Oven Cooling Fan Air Switch Not Detected.	1. Air Switch. 2. Cooling Fan. 3. An Open Circuit In The Lower Oven Air Switch Wiring.	1. Replace air switch. 2. Replace cooling fan. 3. Check all connections. Check that the solder joints in header P6 on the Control display PCB are not broken.
"F70"	Lower Meat Probe Shorted.	A shorted circuit in the meat probe wiring.	Check header P2 on the control display PCB. Check that neither Meat probe wire is pinched to the appliance chassis. If F70 persists, replace the control display PCB.

C, CM and CJ Oven Error Code Messages…continued

Error Code Displayed	Probable Cause	Example	Corrective Action
"F80"	Lower Door Signal Shorted Low.	Defective or jammed lower oven door or latch switches.	Check header P5 on the power/relay board and P11 on both power/relay board and control display PCB. Ensure door switch is operating properly. Check that the door switch wire is not pinched to the appliance chassis. If F80 persists, replace power/relay board. If F80 still persists, replace control display PCB.
"F81"	Lower Door Stuck Unlocked.	Defective or jammed lower oven door or latch switches.	Check header P5 on the power/relay board. Ensure door latch Switches are operating properly. Check that neither latch switch wire is pinched to the appliance chassis. If F81 persists, replace power/relay board.
"F82"	Lower oven door position error (locked & open).	Defective or jammed lower oven door or latch switches.	Check header P5 and P0 on the power/relay board and P11 on both power/relay board and control display PCB. Ensure door and latch switches are operating properly. Check that no door or latch switch wire is pinched to the appliance chassis. If F82 persists, replace power/relay board.
"F83"	Lower door stuck position.	Defective or jammed lower oven door or latch switches	Check header P5 on the power/relay board. Ensure door latch switches are operating properly. Check that neither latch switch wire is pinched to the appliance chassis. If F83 persists, replace power/relay board.
"F84"	Lower latch input shorted.	Defective or jammed lower oven door or latch switches.	Check header P5 on the power/relay board. Ensure door latch switches are operating properly. Check that neither latch switch wire is pinched to the appliance chassis. If F84 persists, replace power/relay board.

C, CM and CJ Oven Error Code Messages…continued

Note 2	Oven sensor should measure 1050 ohms at 75 degrees F. If the sensor measures correctly (within 10%) check each leg of the sensor to ground and to each phase of the electrical supply. If all checks OK, check the contacts inside the molex plug. If the spring contacts are bent or crushed, the sensor will create intermittent errors.
Note 3	The touch panel assembly uses electronic keys and a microprocessor to signal functions. The program is set to scan the electronic touch pads constantly, and if this process is interrupted the microprocessor will turn all of the keys on electronically. If these errors are noted, please turn off the power to the oven, check all of the harnesses on the touch panel and reset the power. This will usually clear the errors.

CT and CMT Ovens with Dreefs Control Error Codes

Error Codes	Causes	Example	Corrective Action
E1	Control bd	Disables clean in both ovens, allow cooking	Replace control board
E2	Sensor or control bd	Oven temp over 625F or clean temp over 890F	Check sensor See note 1
E3	Open sensor	Disables cooking in affected oven	Check sensor See note 1
E4	Shorted sensor	Disables cooking in affected oven	Check sensor See note 1
E5	Control bd	Disables clean in both ovens, cooking usage	Replace control board
E6	Selector switch	Disables individual cook modes in affected oven	Check all functions replace selector switch if one pc. Dreefs, replace control bd. Replace control bd.
E7	Control bd.	Remains in display oven unusable	

CT and CMT Ovens with Dreefs Control Error Codes…continued

Error Codes	Causes	Example	Corrective Action
E8	Control bd	Remains in display oven unusable	Replace control bd
E9	Latch	Latch motor may run but switches do not cycle	Replace latch in affected oven.
E10	Control bd	Checksum error	Replace dreefs bd.
E11	Latch problem	Will not clean	Replace latch in affected oven.
E12	Latch problem	Will not clean	Replace latch in affected oven.
E13	Latch problem	Latch does not run	Check for voltage to latch motor.
E14	Latch problem	Loose latch switch	Check latch for proper operation.
E15	Control bd.	Remains in display oven unusable	Replace dreefs bd.

Note 1 Oven sensors should measure 1050 ohms at 75 degrees F. If the sensor measures correctly (within 10%), check each leg of the sensor to ground and to each of the electrical supply. If all checks OK, check the contacts inside the molex plug. If the spring contacts are bent or crushed, the sensor will create intermittent demos.

S, SM, AND SMW Oven Error Code Messages – Updated 02/21/02

Error Code Displayed	Probable Cause	Example	Corrective Action
F1	Element Supervisor Enabled	Main power/relay board	Replace main power/relay board
F1, F7	Poor Connection Between Display Head And Touch Panel	Intermittent Sensor OR Main power/relay board	Replace control head kit & main power/relay board. See note 1.
F2	Oven Temperature Detected Or Door Light Coming On After 1 Hour Into Self-Clean	Intermittent Sensor Or Main power/relay board	Check oven latch switches & door light are operating properly. Check oven sensor from molex plug on main power/relay board. Should read approximately 1050.
F3	Open oven sensor	Open Sensor Or Circuit Wiring	Check oven sensor from molex plug on main power/relay board. Should read approximately 1050 ohms at room temperature. See note 3. Check and make sure the temperature sensor plug on the main power/relay board is in place and not loose.

S, SM, AND SMW Oven Error Code Messages…continued

Error Code Displayed	Probable Cause	Example	Corrective Action
F4	Shorted Oven Sensor Or Temperature At Sensor Below 40 Degrees F.	Short In Oven Sensor Wiring	Check Oven Sensor Wiring. Should read 1050 ohms when measured from molex plug on main power/relay board at room temperature. See note 3.
F5	Element Supervisor Is disabled (Single Or Upper Oven) On Single ovens including the SM, and SMW models the harness connector from the display head, which should be on J2, is plugged into J7.	Intermittent Sensor Or Main power/relay board Possible Miss-Wire	Check oven sensor wiring. See note 3. If new sensor still displays F5 replace main power/relay board. Check that the male pin connections on the board match the female connector plug on the harness.
F7	The control is reading a shorted key. Possible bad connection due to wiring harness to the touch control board or a bad touch control board.	Connection between control head and touch panel	Replace control head kit, if persists replace touch panel. See notes 1 & 4.

S, SM, AND SMW Oven Error Code Messages…continued

Error Code Displayed	Probable Cause	Example	Corrective Action
F8	Shorted meat probe (No probe is used on these models)	Main power/relay	Replace main power/relay board
F9	Invalid door lock switch status (Single or upper oven)	Stuck latch switches	Check latch and switches for proper operation, replace if necessary.
FC	Communication Error Detected by display head.	2nd power/relay board not power up	**Check cables and harnesses used between the main and 2nd power/relay boards. Check connections between the 2nd power/relay board and the control head. If FC is still displayed, replace 2nd power/relay board. Replace the display head next if FC is displayed. If FC is still displayed after replacing the control head, change the main power/relay board.**
FF	Bad analog/digital converter	Intermittent Sensor or main power/relay board	Replace temperature sensor. If control still displays FF, replace main power/relay board.

S, SM, AND SMW Oven Error Code Messages…continued

Error Code Displayed	Probable Cause	Example	Corrective Action
F-	Communication error detected by main power/relay board.	Control head	Check all connections between both power/relay boards. Check all power connections between the power/relay board and the control head. Check all communication connections between the power/relay board and the control head. See note 1.
Fr	(1) Invalid door latch switch status for lower oven	Defective or jammed lower oven latch switches	Make sure the lower latch switches are operating properly. Replace the lower latch if necessary.
	(2) Communication Error at display head.	Check Control Head	Check all connections between both power/relay boards. Check all power connections between the power/relay board and the control head. Check all communication connections between the power/relay board and the control head. See note 1.
	(3) Element Supervisor Disable Lower Oven	Intermittent lower sensor or 2nd power/relay board	Replace lower oven temperature sensor. If Control still display Fr, replace 2nd power/relay board. If Fr is still displayed, replace the main power/relay board.

S, SM, AND SMW Oven Error Code Messages…continued

Note 1	F1, F7 Errors are caused by a single loss of communication between the control head and the touch panel. Heat migrates to affect the connector on the control head. The new main power/relay board #35-00-760 has been reprogrammed to keep the cooling fan on until internal oven temperature is 300 degrees F.	Single Oven Control Head kit #35-00-703 Double Oven Control Head Kit #35-00-704 Main Power/relay board #35-00-760
Note 2 & 3	Check sensor by taking resistance reading from molex plug on main relay board. A good sensor will read approximately 1050 ohms at 75 degrees F. If out of tolerance by 100 ohms or more replace. Take special care to be sure butt spices are in the air channel in the back and not stuck in the insulation or against oven liner.	When checking sensor also check each lead to chassis ground and to each phase of power line. If grounded or if voltage is present, sensor may read a correct resistance as a loop, but still produce errors. Check lead dress very carefully.

S, SM, AND SMW Oven Error Code Messages…continued

Note 4	The touch panel is an electronic switching device so it does not have actual keys that stick. The control head was designed for use with either membrane switches or electronic inputs.	Our touch panel constantly polls or checks the touch pads for inputs. If the cable has a poor connection or intermittent connection, the microprocessor will electronically switch all of the keys on, this will produce an F7 error which the control head indicates as stuck key.

RDF, REF 30 inch Range error codes

Error Codes	Causes	Example	Corrective Action
F1	Stuck buttons Stuck latch switch	Button is jammed Lock & unlock switches	Unstuck buttons Replace latch
F3	Sensor problem	Open or shorted sensor	Check sensor See note 1

If the error codes persist after eliminating all possible causes, replace the ERC3

Note 1 **Oven sensors should measure 1050 ohms at 75 degrees F. if the sensor measures correctly (within 10%), check each leg of the sensor to ground and to each phase of the electrical supply. If all checks OK, check the contacts inside the molex plug. If the spring contacts are bent or crushed, the sensor will create intermittent errors.**

Thermador ESC30 and GSC30 30 inch range error codes

Error Codes	Causes	Example	Corrective Action
F1	Supervisory relay enable shorted	Bake or broil relay stuck closed	Cancel key will clear error if fault remains it will appear again in 16 seconds. If reappears replace relay board.
F2	Cook/Clean runaway temperature alarm	Bad sensor or poor contacts on molex connector.	Check sensor, cut out molex connector, use wire nuts for good contact. See Note 1
F3	Open oven sensor	Bad sensor or poor contact on molex connector	Check sensor, cut out molex connector, use wire nuts for good contact. See Note 1
F4	Shorted oven sensor	Bad sensor or pinched sensor leads	Check sensor see note 1
F5	Supervisory relay enable open		Replace relay bd.

Thermador ESC30 and GSC30 30 inch range error codes

Error Codes	Causes	Example	Corrective Action
F6	Missing APPLIANCE CHASSIS line cycle detector	If 60 cycles is missing for one minute	Cancel key will reset
F7	Function key stuck or shorted	Stuck key	Must power down to clear this error. If key remains stuck, replace clock assy.
F8	Analog/Digital supervisory	Will cancel cook mode	Reset with cancel key, if persists, replace clock assy.
F9	Door latch supervisory	Will cancel clean mode	Check door latch if latch is OK, replace clock.

Note 1 **Oven sensors should measure 1050 ohms at 75 degrees F. if the sensor measures correctly (within 10%), check each leg of the sensor to ground and to each phase of the electrical supply. If all checks OK, check the contacts inside the molex plug. If the spring contacts are bent or crushed, the sensor will create intermittent errors.**

Error codes for Gaggenau Steam Oven model ED-220/221

Error Code	Cause	Example	Corrective Action
F10	Oven sensor open	Open circuit	Check sensor **See note 1**
F11	Oven sensor shorted	Pinched wire	Check sensor **See note 1**
F12	Probe open	Open circuit	Check probe **See note 2**
F13	Probe shorted	Pinched wire	Check probe **See note 2**
F14	Relay bd. Sensor open	Open circuit	Replace relay bd.
F15	Relay bd sensor shorted	Short circuit	Replace relay bd.
F20	Humidity switch not working properly	Poor contact at switch or ribbon cable	Check contacts in diagnostic mode **See note 3**
F21	Temperature switch not working properly	Poor contact at switch or ribbon cable	Check contacts in diagnostic mode **See note 3**
F23	Relay control not chooseable		No contact at flat wire or electronics defective

Error codes for Gaggenau Steam Oven model ED-220/221

Error Code	Cause	Example	Corrective Action
F30	EEPROM not programmable	Will not go into diagnostic mode will not complete calibration and will cancel	Replace the display board. **See note 4** open heating element
F61	Too much water or not enough heat during calibration run		
F62	Not enough water or too much heat during calibration run	Steam dispensing clogged, or convection fan stalling	Check convection fan for proper operation, replace if necessary. Replace steam valve assembly. Rerun calibration check cooling valve, replace water valve if necessary correct leak, dry off the sensors on rely board. Correct drain restriction
F63 F70 F71	Oven does not cool at end of calibration. Water in base pan of oven drain pump is running for more than two minutes	Condensation cooling valve inoperative. Leaking from drain or internal hoses blocked drain, drain running uphill, drain coiled.	

Error codes for Gaggenau Steam Oven model ED-220/221…continued

Error Code	Cause	Example	Corrective Action
F72	Base pan sensor	Defective electronics	Replace relay board
F73	Main water valve not closing properly	Check incoming water pressure (must be minimum 16 PSI) check power to valve pressure switch stuck closed or main valve stuck open.	Water valve, relay board
F74	Pressure switch stays closed		Indicates pressure in system when there should be none.

Note 1

Note 2 The food probe in this oven is a PTC 1000 sensor. It is not unpluggable and is tested the same as in Note 1

Note 3 The oven has a very comprehensive diagnostic program. Instruction are located in the **Gaggenau 2000 Service Manual.**

Note 4 The program is kept in the display head on this oven. If the display is replaced, the parameters must be programmed into the new board. Specific instruction are listed in the **Gaggenau 2000 Service Manual**

Gaggenau EB 270/271/290/291 Oven Error Codes

Error Code	Cause	Example	Corrective Action
F10	Open oven sensor	Open circuit	Check sensor **See note 1**
F11	Shorted oven sensor	Pinched wire	Check sensor **See note 1**
F12	Open meat probe	Socket, wiring	Check probe **See note 2**
F13	Shorted meat probe	Socket, wiring	Check probe **See note 2**
F14	Relay bd. Sensor	Open	Replace relay bd.
F15	Relay bd Sensor	Short	Replace relay bd.
F16	Catalyst sensor open	Wiring	Check sensor **See note 3**
F17	Catalyst sensor shorted	Wiring	Check sensor **See note 3**
F20	Function switch problems	Open cable or switch	Run diagnostics **See note 4**
F21	Temperature switch problems	Open cable or switch	Run diagnostics **See note 4**
F22	Push buttons don't work	Open cable or switch	Run diagnostics **See note 4**
F23	Relay control not chooseable		No contact at flat wire or electronics defective

Gaggenau EB 270/271/290/291 Oven Error Codes

Error Code	Cause	Example	Corrective Action
F30	EEPROM error		Replace display bd. **See note 5**
F40	Latch error	Wiring, motor, microswitch	Check wires, switch, run diagnostics **See note 4**
F41	Data cable shorted to ground	Check wires	Run diagnostics **See note 4**
F42	Door switch	Switch open while door locked	Check switch, wiring

Gaggenau EB 270/271/290/291 Oven Error Codes...continued

Note 1 Oven sensors should measure 1050 ohms at 75 degrees F. if the sensor measures correctly (within 10%), check each leg of the sensor to ground and to each phase of the electrical supply. If all checks OK, check the contacts inside the molex plug. If the spring contacts are bent or crushed, the sensor will create intermittent errors.

Note 2 Meat probe is an NTC device and will measure approximately 50,000 ohms at room temperature. Resistance decreases as temperature increases.

Note 3 Catalyst sensor checks much the same as oven sensor. However, the resistance will be 500 ohms at room temperature.

Note 4 This oven has a very comprehensive diagnostic program. Please refer to **Gaggenau 2000 service Manual** for specific instructions.

Note 5 The program is located in the display head on this oven. If the clock/display is replaced, the parameters must be programmed into the new board. Please refer to the **Gaggenau 2000 Service Manual** for instructions.

8 FUNCTION CODES

Faults at the appliance, a correct or incorrect adjustment as well as the RESET-function are indicated / confirmed by signals or error codes.

Explanations:

OOO Factory- / universal comparison successfully finished
F Error during the RESET (internal self test)
F 1 Error when starting an adjustment, e.g. appliance has not yet been adjusted by a factory or universal comparison
Or
After starting the adjustment, the position „steaming“ has not been chosen within 8 sec.
Or
After an adjustment another adjustment is started
F 2 Fault at the water sensor
F 3 Fault at the steam sensor
F 4 Fault at the TRIAC or heating element or the water temperature has not increased for min 50°K/90°F
F 5 Water sensor not in right position (Function code shown only possible during factory or universal comparison!)
F 6 Steam sensor faulty installed (only possible during factory or universal comparison!)
FAC Factory comparison is running
dEF Universal comparison is running

Blinking heat up symbol
Customer Comparison in use

Blinking in the display
Holyday safety function/after 4 h continuously running Reset: switch off/on appliance

Drain symbol
Drain valve did not reach end position

Drain symbol
Drain valve open

Limiter symbol
Dry run or overheating / above 107 °C/225°F
If appliance will be switched off and on F 2 occurs in the display=Appliance /Sensor too hot.
Reset: Switch off appliance to cool down

Display compl. Switched ON and sounding signal

Reset confirmation/Display and Buzzer check
Comparison now required

Blinking „o“
Child lock function in use

HBL/HBN 7 FAULT CODE DEFINITIONS AND BASIC TROUBLESHOOTING

HINT: After a latch fault, due to any hardware problem, the control can disable one cavity and prevent the opposite one to work in self-clean. First remove the fault cause, then after a latch auto-test at power-up, if either cavities or clean mode are still inhibited, press and hold the [Start] key for one minute until F121 is displayed, then press [Cancel].

Generally, to cancel a persistent fault, press and hold the [Start] key for one minute until F121 is displayed, then press [Cancel].

HINT: Sometimes at power-up, the F155 fault code is displayed. Press [Cancel] key to reset the alarm. If F155 is displayed again when starting a cooking mode, it means that parameters are corrupted in the Display Board and the EEPROM needs to be re-programmed. Otherwise, the oven will work correctly.

Error	Cause	Corrective Action
F31	Upper (or single) oven temperature sensor failure. An open or short circuit in the sensor wiring.	1. Check all connections, especially P4 on the Power Board. 2. Unplug the sensor connector and check sensor resistance (approximately 1080 ohms at room temperature with connector removed). Remember to reconnect it. 3. Check that neither sensor wire is open or pinched to the appliance chassis. 4. Check that the solder joints in header P4 on the Power Board are not broken. 5. If sensor is OK, replace Power Board.

Error	Cause	Corrective Action
F32	Lower oven temperature sensor failure. An open or short circuit in the lower oven sensor wiring.	1. Check all connections, especially P24 on the Power Board. 2. Unplug the sensor connector and check sensor resistance (approximately 1080 ohms at room temperature with connector removed). Remember to reconnect it. 3. Check that neither sensor wire is open or pinched to the appliance chassis. 4. Check that the solder joints in header P4 on the Power Board are not broken. 5. If sensor is OK, replace Power Board.
F41	Upper (or single) oven motorized latch will not lock. Defective or jammed upper (or single) oven door or latch switches. Defective latch motor or its wiring.	1. Check P4 connector on the Power Board. 2. Ensure door latch switches are operating properly. 3. Check that neither latch switch nor common wires are pinched to the appliance chassis. 4. Check P10 connector and check if latch motor wire is pinched to the appliance chassis. 5. If F41 persists, replace Power Board.

Error	Cause	Corrective Action
F42	Lower motorized latch will not lock. Defective or jammed lower oven door or latch switches. Defective latch motor or its wiring.	1. Check P24 connector on the Power Board. 2. Ensure door latch switches are operating properly. 3. Check that neither latch switch nor common wires are pinched to the appliance chassis. 4. Check P10 connector and check if latch motor wire is pinched to the appliance chassis. 5. If F42 persists, replace Power Board.
F43	Upper (or single) oven motorized latch will not unlock. Defective or jammed upper oven door or latch switches. Defective latch motor or its wiring.	1. Check P4 connector on the Power Board. 2. Ensure door latch switches are operating properly. 3. Check that neither latch switch nor common wires are pinched to the appliance chassis. 4. Check P10 connector and check if latch motor wire is pinched to the appliance chassis. 5. If F43 persists, replace Power Board.

Error	Cause	Corrective Action
F44	Lower motorized latch will not unlock. Defective or jammed lower oven door or latch switches. Defective latch motor or its wiring.	1. Check P24 connector on the Power Board. 2. Ensure door latch switches are operating properly. 3. Check that neither latch switch nor common wires are pinched to the appliance chassis. 4. Check P10 connector and check if latch motor wire is pinched to the appliance chassis. 5. If F44 persists, replace Power Board.
F45	Upper (or single) oven latch both locked and unlocked. Defective or jammed upper oven door or latch switches.	1. Check P4 connector on the Power Board. 2. Ensure door latch switches are operating properly. 3. Check that neither latch switch nor common wires are pinched to the appliance chassis. 4. If F45 persists, replace Power Board.

Error	Cause	Corrective Action
F46	Lower oven latch both locked and unlocked. Defective or jammed lower oven door or latch switches.	1. Check P24 connector on the Power Board. 2. Ensure door latch switches are operating properly. 3. Check that neither latch switch nor common wires are pinched to the appliance chassis. 4. If F44 persists, replace Power Board.
F111	Runaway upper (or single) oven temperature (>650°F). a) Oven powered on when temperature inside oven is >650°F. b) Intermittent or bad temperature sensor. c) Heating element relay stuck on.	1. Allow oven to cool down <650°F before turning power on. 2. Check P4 connector on the Power Board. 3. Unplug the upper (or single) oven sensor connector and check sensor resistance (approximately 1080 ohms at room temperature with connector removed). 4. If sensor is OK, replace Power Board. 5. Check wiring to heating element. If OK, replace Power Board.

Error	Cause	Corrective Action
F112	Runaway lower temperature (>650°F). a) Oven powered on when temperature inside oven is >650°F. b) Intermittent or bad temperature sensor. c) Heating element relay stuck on.	1. Allow oven to cool down <650°F before turning power on. 2. Check P24 connector on the Power Board. 3. Unplug the sensor connector and check lower sensor resistance (approximately 1080 ohms at room temperature with connector removed). 4. If sensor is OK, replace Power Board. 5. Check wiring to heating element. If OK, replace Power Board.
F113	Runaway upper (or single) oven temperature (>950°F). a) Intermittent or bad temperature sensor. b) Heating element relay stuck on.	1. Check P4 connector on the Power Board. 2. Unplug the upper (or single) oven sensor connector and check sensor resistance (approximately 1080 ohms at room temperature with connector removed). If sensor is OK, replace Power Board. 3. Check wiring to heating element. If OK, replace Power Board.

Error	Cause	Corrective Action
F114	Runaway lower temperature (>950°F) a) Intermittent or bad temperature sensor. b) Heating element relay stuck on.	1. Check P24 connector on the Power Board. 2. Unplug the sensor connector and check lower sensor resistance (approximately 1080 ohms at room temperature with connector removed). 3. If sensor is OK, replace Power Board. 4. Check wiring to heating element. If OK, replace Power Board.
F121	Stuck keyboard key. Bad display head or bad keyboard.	1. Check all connections between the display head (P5) and the keyboard (J1). 2. Make sure that there are no objects in close proximity to the front and back sides of the keypads. 3. Replace Display Board or keyboard or both.
F123	Keyboard disconnected Bad connection between keyboard and Display Board.	1. Check all connections between keyboard (J1) and Display Board (P5). 2. If OK, replace keyboard or Display Board or both.

Error	Cause	Corrective Action
F125	[Upper Cancel] or [Cancel] for single oven key circuit problem. Bad connection or bad Display or keyboard.	1. Check all connections between keyboard (J1) and Display Board (P5). 2. If OK, replace keyboard or Display Board or both.
F126	[Lower Cancel] key circuit problem. Bad connection or bad Display or keyboard.	1. Check all connections between keyboard (J1) and Display Board (P5). 2. If OK, replace keyboard or Display Board or both.
F127	[Cancel] key redundant return problem. Bad connection or bad Display or keyboard.	1. Check all connections between keyboard (J1) and Display Board (P5). 2. If OK, replace keyboard or Display Board or both.
F141	Slave micro not functioning. Bad connection or bad Display or keyboard.	1. Check power and Display Board connectors P1B and associated wiring. 2. If OK, replace Power Board. 3. If fault persists, replace Display Board.

Error	Cause	Corrective Action
F143	Vcc open circuit on slave micro. Bad Power Board or Display Board.	1. Check power display and Display Board connectors P1B associated wiring. 2. If OK, replace Power Board. 3. If fault persists, replace Display Board.
F145	Sensor input on the slave micro shorted together. Bad Power Board.	Replace Power Board.
F147	Ground open circuit on the slave micro. Bad Power Board.	Replace Power Board.
F151	Eeprom failure or communication circuit error. Bad Power Board or Display Board.	1. Check power and Display Board connectors P1B and associated wiring. 2. If OK, replace Display Board. 3. If fault persists, replace Power Board.

Error	Cause	Corrective Action
F153	Control calibration values not in range. Bad Power Board or Display Board.	1. (If possible, re-calibrate.) 2. Check power and Display Board connectors P1B and associated wiring. 4. If OK, replace Power Board. 5. If fault persists, replace Display Board.
F155	Checksum match error. Wrong eeprom data on Display Board.	1. If possible, re-write default data to the Display Board eeprom via P7. 2. If not, replace Display Board.

FAULTS NOT DETECTED BY THE CONTROL

Problem	Possible Solutions
Meat probe icon appears on the display even if the probe is not plugged in.	1. Check P2 connector on the Display Board and the wires. 2. Check the connection terminals on the socket mounted on the cavity left sidewall. They may be shorted or have a loose contact (for example, through the aluminum foil around the insulating material).
Lock symbol is always displayed.	1. Check the latch and door switches and their connections. 2. Check if any shorts on P4 (for upper or single oven) or P24 (for lower oven) connector pins. 3. If everything is OK, try to replace the Power Board.
Some of the keys are not working. No beeps when touched and expected action not executed.	1. Check the connection cable between the Display Board and the Keyboard. 2. If OK, replace the Keyboard.
Buzzer Never beeps.	Replace Display Board.

Problem	Possible Solutions
Oven lights always off	1. Check P11 connector on the Display Board and the wires. 2. Check the transformer. 3. Check that the lamps are not burnt. 4. If OK, replace Power Board.
Cavity fan doesn't work or it works at one speed only.	1. Check P10 connector on the Display Board and the wires. (Check also P19 terminal for single oven only). 2. For double oven only, check P2 connector on the Auxiliary Relay Board and the relay outputs. 3. If relay outputs don't work, check also the two low voltage cables between Power and Auxiliary Board. 4. Check R2 (39 ohms) resistor in series with the fan coil.
Cooling fan doesn't work or it works at one speed only.	1. Check P10 connector and P19 terminal on the single oven Power Board or P11 connector on the double oven Power Board and their connections. If Power Board output is not activated, replace the board. 2. Check R1 (78 ohms) resistor in series with the fan coil. 3. Check the circuit (latch switch) to by-pass the resistor for high speed in self-clean.

Problem	Possible Solutions
One of the elements is not energized.	1. Check all connections between the relays on the Power Board and the elements. 2. Check the relay outputs on the Power Board.
All the elements are not energized.	1. Check the common L1 red wire on the Power Board relays. 2. Check the safety thermostat connection in series with black L2 wire. 3. Check, if present, the DLB relay connections on the Auxiliary Relay Board. 4. Check, if present, the DLB relay outputs. If they are not OK, replace the Auxiliary Relay Board.
Display never turns on	1. Check Power supply connection on the Power Board (P18 for double oven, P5 for single oven). 2. Check the P1A cable between Power and Display Board. 3. Disconnected the P1A cable and measure by a meter the voltages on the P1A connector on the Power Board. a. If they meet the values indicated in the electric schematics then replace the Display Board. b. If they don't meet, replace the Power Board.

WFR 2460 Washer Fault Codes

The last 8 fault codes are stored & displayed!

T1: Error (error displays).

The programme can be ended with the "Start / Pause" button. The errors can be selected with the "Menu" button. Only the errors of the last 8 wash programmes are stored and displayed.

Sequence:

Time/Operation	Display	Note
HINTS: # of errors reads "0" for faults which didn't occur. Look at # of errors, not error #, to see if faults occurred.	>>MENU T1: ERRORS 7- Er : 12 Number of errors — Error #	The error frequency is displayed on the lower line and the error number on the right. **Hint:** Scroll thru all errors to check if any occurred.

Display	Error	Possible Cause	Remedial action
Er: 01	Door open	Door switch not actuated	Close door, check lock
Er: 02	Door lock cannot be released		
Er: 03	Door lock cannot be locked		
Er: 04	Door actuation defective	Triac defective / relay stuck	Replace controller
Er: 05	NTC interruption	Cable break / NTC damaged	Rectify cable short – circuit / replace NTC
Er: 06	NTC short-circuit	Cable short-circuit / NTC damaged	Rectify cable short-circuit / replace NTC
Er: 07	Unexpected heating	Temperature increase without actuation of heater	Start T/P 18 heater test programme
Er: 08	Heating time exceeded	After 105 min.	Start T/P18 heater test programme
Er: 09	Uncontrolled motor acceleration	Motor triac defective	Start T/P4 motor test programme.
Er: 10	Motor does not rotate	No / incorrect tacho-generator signal	Start T/P4 motor test programme.
Er: 11	Reversing relay test not passed		Start T/P4 motor test programme.
Er: 12	Flow rate sensor detects low water level	Sensor / line	Check line Replace sensor
Er: 13	Water inlet time exceeded	Water inlet / sensor	Start T/P11 sensor test programme
Er: 14	Water inlet time exceeded	W controller after 6 min.	Start T/P9 controller test programme
Er: 15	Pumping time exceeded	0 level not reached within 6 min.	Check pump circuit
Er: 16	Safety level reached		Start T/P8 and 9 level test programme
Er: 17	Pressure sensor		Check line Replace sensor
Er: 18	Calibration of pressure sensor not possible		Start T/P8 level test programme
Er: 19	Aqua stop fault	Aqua stop actuated	Eliminate leaks
Er: 20	Turbidity sensor	Calibration not possible	Start T/P10 sensor test programme
Er: 21	Update		
Er: 22	Spin cycle terminated	After 15 start-up attempts	Start T/P4 motor test programme
Er: 23	Foam detected	Via analogue sensor	Consult customer about dosing

WFK 2401 Washer Fault Codes

Fault Code	Faults	Possible Causes/Notes	Corrective Actions
00	**No Faults**		
01	**No Water filling**	• Water supply turned off. • Water inlet hose filters (strainers) blocked. • Water pressure too low. • Control module has failed. • Water inlet valve(s) has failed. NOTE: Fault code occurs during customer use or test program.	• Turn on supply. • Check water inlet hose filters. Clean if dirty. Replace if damaged. • Check if incoming water pressure is 14.5 – 145 psi. • Check voltage output to water inlet valves (when they're energized). If no voltage, replace faulty control module. • Measure resistance of water inlet valves (~ 2.7 – 3.3 kΩ). Replace inlet valve(s), if fault.
02	**No heating**	• Heater has failed. • NTC has failed. • Heater is covered with scale. • Voltage too low. • Control module has failed. NOTE: Fault code occurs during customer use or test program.	• Disconnect heater and measure resistance at terminals (~15 - 28Ω). Replace heater if faulty. • Disconnect NTC and measure resistance at terminals (~5.4 – 6.5 kΩ @ 20°C (68°F)). Replace NTC if faulty. • If possible, remove & clean heater. If not, replace it. • Have an electrician check the house wiring and the wiring to the washer to make sure it is 240 volts. • Check voltage output to heater (when it's energized). If no voltage, replace faulty control module.
03	**No draining**	• Drain pump or motor protector has failed. • Control module has failed. NOTE: Fault code occurs during customer use or test program.	• Disconnect drain pump and measure resistance at connector (~ 83Ω). Replace drain pump if faulty. • Check voltage output to drain pump when it's energized). If no voltage, replace faulty control module.
04	**Overheating**	• Control module has failed. • NTC failed. NOTE: Fault code occurs during customer use or test program.	• Check voltage to heater. If voltage is present when heater shouldn't be on, replace faulty control module. • Disconnect NTC and measure resistance at terminals (~5.4 – 6.5 kΩ @ 20°C (68°F)). Replace NTC if faulty.

WFK 2401 Washer Fault Codes

Fault Code	Faults	Possible Causes/Notes	Corrective Actions
05	**Drum motor erratic**	• Motor drive circuit (Triac) has failed. • Drum drive motor has failed. • Reserving relays have failed. NOTE: Fault code occurs during test program.	• Check voltage at motor connectors when motor is energized. If low or no voltage, replace faulty control module. • Check voltage at motor connectors when motor is energized. If ~240V, replace faulty drum motor. • Check voltage at motor connectors when motor is energized. If voltage doesn't reverse, replace faulty control module.
06	**Door open or won't lock**	• Door isn't closed properly. • Door latch is broken. • Door lock is faulty. NOTE: Fault code occurs during customer use or test program.	• Close door securely. If door won't latch, check door latch and door hinge alignment. • Replace broken door latch. • Measure resistance of door lock mechanism (~ 300 – 1350 Ω). Replace faulty door lock mechanism.
08	**Drum motor won't run**	• Drum rear bearing has failed. • Motor drive circuit (Triac) has failed. • Drum drive motor has failed. • Reserving relays have failed. NOTE: Fault code occurs during test program.	• Check how drum rotates. If drum wobbles or won't move, replace faulty rear bearing. • Check voltage at motor connectors when motor is energized. If low or no voltage, replace faulty control module. • Check voltage at motor connectors when motor is energized. If ~ 240V, replace faulty drum motor. • Check voltage at motor connectors when motor is energized. If voltage doesn't reverse, replace faulty control module.

WFK 2401 Washer Fault Codes

Fault Code	Faults	Possible Causes/Notes	Corrective Actions
09	**NTC failed**	• NTC open circuited. NOTE: Fault code occurs during test program.	• Disconnect NTC and measure resistance at terminals (~5.4 – 6.5 kΩ @ 20°C (68°F)). Replace NTC if faulty.
10	**NTC failed**	• NTC shorted NOTE: Fault code occurs during test program.	• Disconnect NTC and measure resistance at terminals (~5.4 – 6.5 kΩ @ 20°C (68°F)). Replace NTC if faulty.
12	**Drum motor reversing relays failed**	• Reversing relays have failed. NOTE: Fault code occurs during test program.	• Check voltage at motor connectors when motor is energized. If voltage doesn't reverse, replace faulty control module.

NOTES:

- While running water inlet valves, pressure switch, heater & drain pump test, display shows fault codes ***01*** since water doesn't totally fill & ***02*** since water isn't heated. This is normal.

WFL 2060 Washer Fault Codes

Fault	Possible Causes	Flashing Lights	Program fault Occurred	
Door open or won't lock	❑ Door left open. ❑ Faulty door latch or door lock	○ **Door locked** ○ **Rinse/Spin** ● **Wash**	**Wash**	
No water filling	❑ Water shut off. ❑ Inlet strainer filters blocked. ❑ Water pressure too low (<1 bar)	○ **Door locked** ● **Rinse/Spin** ○ **Wash**	**Wash**	
No heating	❑ Fault heater. ❑ Voltage too low. ❑ Excessive scale on heating element.	○ **Door locked** ● **Rinse/Spin** ● **Wash**		**Test**
No draining	❑ Blocked sensor. ❑ Faulty water level controlled. ❑ Faulty or blocked drain pump.	● **Door locked** ○ **Rinse/Spin** ○ **Wash**	**Wash**	
Motor won't run	❑ Faulty speed control. ❑ Triac short-circuited. ❑ Faulty reversing relay.	○ **Door locked** ● **Rinse/Spin** ○ **Wash**		**Test**
Overheating	❑ Faulty control module.	● **Door locked** ● **Rinse/Spin** ○ **Wash**		**Test**
NTC failed (short or open circuited)	❑ Faulty wire harness. ❑ Faulty NTC.	● **Door locked** ● **Rinse/Spin** ● **Wash**		**Test**

WTA 35 & WTL 54 Fault Codes & Troubleshooting

HINT: Use dryer test program to diagnose dryer problems.

HINT: Remove top panel of dryer to access wiring, control module and drum conductance brushes.

Fault code	*Problem*	*Possible Cause*	*Suggested Action*
Damp Dry Light flashes	❑ **NTC # R3 failed** **NOTE**: When viewing wiring diagram, see NTC # R3.	❑ NTC (temperature sensor) failed.	❑ Check voltage at and wiring to NTC. Turn off dryer, measure NTC resistance and replace faulty NTC. **NOTE**: NTC resistances: ▪ 9 – 11 kΩ @ 59°F - 221°F
Regular Dry Light flashes	❑ **NTC # R2 failed** **NOTE**: When viewing wiring diagram, see NTC # R2.	❑ NTC (temperature sensor) failed.	❑ Check voltage at and wiring to NTC. Turn off dryer, measure NTC resistance and replace faulty NTC. **NOTE**: NTC resistances: ▪ 18 – 22 kΩ @ 59°F – 392°F
Extra Dry Light flashes	❑ **Heater** (dryer overheated)	❑ Heater failed. ❑ Drum motor failed.	❑ Check voltage at and wiring to heater. Turn off dryer, measure heater resistance and replace faulty heater. **NOTE**: Heater resistances: ▪ 62 – 67 Ω (800W – E2 on wiring diagram on page E-2) ▪ 25 – 29 Ω (1900W – E3 on wiring diagram) ❑ Check voltage at and wiring to drum motor. Turn off dryer, measure motor resistance and replace faulty motor. **NOTE**: Drum motor resistances (see wiring diagram): ▪ 19 – 25 Ω (between points X2.2 – X2.3 for WTL 54) ▪ 18 – 23 Ω (between points X2.2 – X2.4 for WTL 54) ▪ 25 – 29 Ω (between points X2.2 – X2.3 for WTL 35) ▪ 25 – 30 Ω (between points X2.2 – X2.4 for WTL 35)

WTA 35 & WTL 54 Fault Codes & Troubleshooting

Anti – Crease/End Light flashes	❑ **Time fault** (drying time too long)	❑ Control module failed.	❑ Check voltage at and wiring to module. Turn off dryer, and replace faulty module.
		❑ Door lock failed.	❑ Check voltage at and wiring to door lock. Turn off dryer, measure door lock resistance and replace faulty door lock.
		❑ Moisture sensor(s) failed.	❑ Run moisture sensor conductance test. Check voltage at and wiring to sensors. Turn off dryer and replace faulty sensor(s).
		❑ Water level switch failed (WTL 5400 only).	❑ Check voltage at and wiring to Hi-Limit. Turn off dryer, measure Hi-Limit resistance and replace faulty Hi-Limit.
		❑ Hi-Limit ("overheat") thermostat tripped and failed to reset.	❑ Check voltage at and wiring to Hi-Limit. Turn off dryer, measure Hi-Limit resistance and replace faulty Hi-Limit. **NOTE**: Hi-Limit trips @ 248°F (WTL 54) or 212°F (WTA 35)
		❑ Supply voltage too low.	❑ Have customer upgrade power system to provide consistent voltage to dryer during heating (need min. 198V).
E1	❑ **Pump failed** (WTL 5400 condensation dryer only)	❑ Pump failed.	❑ Check voltage at and wiring to pump. Turn off dryer, measure pump resistance (110 – 136 Ω) and replace faulty pump.
---	❑ **Dryer won't run or indicator lights won't come on** (no power to dryer)	❑ Dryer not turned on. ❑ No power to dryer ❑ Dryer fuse has blown.	❑ Turn "on/off" switch on. ❑ Check customer circuit breaker, fuse box or power connections. ❑ Unscrew holder cap & replace fuse (15A, type SC-15).

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Dishwasher Error codes

Error codes that the consumer will see on models with numeric display:

F	Indicates a water level or filing error. Underfill, overfill or water in the base.	**See note 1**
2H	Indicates that the last wash cycle took over 99 minutes to complete. Usually indicates inlet water too cold, or heating fault in the dishwasher.	**See note 1 & 2**

Error codes only displayed in diagnostic program: **See note 3**

Models with numeric display:

0	**No faults**
1	**Aqua Sensor "Sensotronic" fault**
2	**Heating fault**
4	**Filling fault**
8	**NTC (temperature sensor) fault**

Models without numeric display:

LED's on the buttons will be lit to indicate faults.
Please refer to **B/S/H Dishwasher Troubleshooting Tips or**
Major Appliances Technical Manual for specific model / code information.

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Dishwasher Error Codes…continued

NOTE 1 Once cause of this fault has been corrected, the code will reset itself 15 minutes after The dishwasher has been turned on, or by running the dishwasher through the diagnostic program. See **B/S/H Dishwasher Troubleshooting Tips, or Major Appliances Technical Manual** for instruction by model number.

Note 2 Heating faults must be tested in the diagnostic mode. The diagnostic program will begin with running the drain motor for 30 seconds, then it will check the aqua sensor (if equipped) for 65 seconds, filling until water level switch is closed, and then the circulation pump and heater will be activated. To test heater circuit, put amprobe around the red wire from control board to the base. It would read approximately 10 amps if all is working properly. If no amperage is indicated , test for voltage (120VAC) at the red wire. If voltage is present, but no amperage, the heater assembly is at fault. If no voltage is present, the relay contact on the control board is most likely the cause. Resolder the connection as per instructions in **B/S/H** service bulletin.

Note 3 Each model dishwasher has a diagnostic program which allows the technician to quickly diagnose specific faults without having to wait for a regular wash cycle to reach the proper time for specific events to occur. Each program will begin by running the drain motor for 30 seconds, calibrating the aqua sensor for 65 seconds (if model is equipped with aqua sensor), filing until water level switch (f1) is closed, the cir culation motor begins to run, the soap dispenser actuates, and the heater will be activated to heat the water to 150 degrees, and the unit will drain. The instruction for entering the diagnostic programs and specific fault code indication are listed in the **B/S/H Dishwasher Troubleshooting Tips** manual or the **Major Appliance Technical Manual.**

Note 4 If multiple faults occur, the numeric codes will be added and displayed as a total, for example, if the unit had both a heating and an aqua sensor fault, the numeric indication would be **5, 1** for aqua sensor fault plus **4** for the heating fault.